WHAT IS CLAIMED IS:

1. A parking assist apparatus comprising:

a display unit that displays a target parking frame to be superimposed on an

5   actual image around a vehicle, a position of the target parking frame being adjustable by

a user;

a position determining unit that determines a target parking position

corresponding to the position of the target parking frame displayed on the actual image;

a parking assist control unit that controls to guide the vehicle to the target

10   parking position on a target path;

a feature determining unit that determines a feature on the actual image through

an image recognition; and

a path correction unit that automatically corrects the target path such that a

correlation between the target parking position upon start of a parking assist control and

15   the feature is maintained during execution of the parking assist control.

2. The parking assist apparatus according to claim 1, wherein the feature

determining unit determines a portion that is image recognizable and displayed on the

actual image around the target parking frame as the feature.

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3. The parking assist apparatus according to claim 2, wherein the feature

determining unit determines a white line of a parking frame as the feature.

4. The parking assist apparatus according to claim 3, wherein the position of the

25   target parking frame is adjustable in a direction parallel to the white line of the parking

frame.

5. The parking assist apparatus according to claim 2, wherein the feature

determining unit determines one of a road shoulder and a car stop around the parking

frame as the feature.

6. The parking assist apparatus according to claim 1, further comprising an
auxiliary switch that adjusts the position of the target parking frame displayed on a screen
5   of the display unit in a longitudinal direction.

7. The parking assist apparatus according to claim 6, wherein the screen of the
display unit is a touch panel, and the auxiliary switch is displayed to be superimposed on
the screen and operated by the user to move the position of the target parking frame.

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8. The parking assist apparatus according to claim 1, further comprising a
detecting unit that detects a deviation of the vehicle from the target path.

9. The parking assist apparatus according to claim 8, wherein the detecting unit
15   detects a deviation of the vehicle from the target path by comparing the relative positions
the target parking frame during execution of the parking assist control and the feature on
the actual image with a reference correlation.

10. The parking assist apparatus according to claim 9, wherein the parking assist
20   control unit automatically changes the position of the target parking frame displayed on
the screen of the display unit when the detecting unit detects the deviation of the vehicle
from the target path.

11. The parking assist apparatus according to claim 9, wherein the parking assist
25   control unit stops the parking assist control when the detecting unit detects the deviation
of the vehicle from the target path.

12. The parking assist apparatus according to claim 9, wherein the parking assist
control unit updates the target path and a target steering angle corresponding to a newly

determined target parking frame and resumes the parking assist control in accordance with the updated target path when the detecting unit detects the deviation of the vehicle from the target path.

13. The parking assist apparatus according to claim 12, wherein the parking assist control unit stops the parking assist control when it fails to obtain the updated target path upon detection of the deviation of the vehicle from the target path.

14. The parking assist apparatus according to claim 8, wherein the detecting unit compares a relative moving vector of the vehicle with respect to the feature on the actual image during execution of the parking assist control with an absolute moving vector of the vehicle during execution of the parking assist control, and detects the deviation of the vehicle from the target path when it is determined that there is a difference between the relative and the absolute moving vectors.

15. The parking assist apparatus according to claim 14, wherein the parking assist control unit updates the target path and the target steering angle according to the difference between the relative and the absolute moving vectors.

16. The parking assist apparatus according to claim 14, wherein the moving vector is estimated by calculating a change amount of a moving distance and a direction of the vehicle during execution of the parking assist control based on at least one of output signals from a vehicle speed sensor, a steering angle sensor, and a yaw rate sensor.

17. The parking assist apparatus according to claim 16, wherein the moving vector is estimated at a predetermined running distance of the vehicle.

18. A parking assist apparatus comprising:

display means for displaying a target parking frame to be superimposed on an

actual image around a vehicle, a position of the target parking frame being adjustable by a user;

position determining means for determining a target parking position corresponding to the position of the target parking frame displayed on the actual image;

parking assist control means for controlling to guide the vehicle to the target parking position on a target path;

feature determining means for determining a feature on the actual image through an image recognition; and

path correction means for automatically correcting the target path such that a correlation between the target parking position upon start of a parking assist control and the feature is maintained during execution of the parking assist control.

19. A parking assist method comprising:

a first step of displaying a target parking frame to be superimposed on an actual image around a vehicle, a position of the target parking frame being adjustable by a user;

a second step of determining a target parking position corresponding to the position of the target parking frame displayed on the actual image;

a third step of controlling to guide the vehicle to the target parking frame on a target path;

a fourth step of determining a feature on the actual image through an image recognition; and

a fifth step of automatically correcting the target path such that a correlation between the target parking position upon start of the parking assist control and the feature is maintained during execution of the parking assist control.